

# List of All Chemicals

## P Coffea arabica (Rubiaceae)

### Common name(s)

Coffee

### How used

Food

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
10-O-METHYLCAFESTOL	Seed	--	--	*	
2,3,5-TRIMETHYLPHENOL	Seed	--	--		Jim Duke's personal files.
2-ETHYLPHENOL	Seed	--	--		Jim Duke's personal files.
2-METHOXY-4-ETHYLPHENOL	Seed	--	--		Jim Duke's personal files.
24-METHYLENE-CYCLOARTENOL	Seed	--	--	*	
24-METHYLENEPHENOL	Seed	--	--	*	
3,4-DICAFFEOYL-QUINIC-ACID	Seed	--	--	*	
<b>Activities (2)</b>					
Antioxidant					
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
3,5-DICAFFEOYL-QUINIC-ACID	Seed	--	--	*	
<b>Activities (3)</b>					
Antihemolytic 10 uM					Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994.
Antioxidant 10 uM					Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994.
Antiradicular 10 uM					Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994.
4,5-DICAFFEOYL-QUINIC-ACID	Seed	--	--	*	
4-ETHYLPHENOL	Seed	--	--		Jim Duke's personal files.
4-METHOXY-4-VINYLPHENOL	Seed	--	--		Jim Duke's personal files.
5-AVENASTEROL	Seed	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
7-STIGMASTEROL	Seed	--	--	*	
ACETALDEHYDE	Seed	--	--	*	
<b>Activities (6)</b>					
Addictive 8 ug/kg					Science News, 145: 294.
Fungicide					
Perfumery FEMA 4-25					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide					
Respiraparalytic					
Tyrosinase-Inhibitor ID50=43 ug/ml					
ADENINE	Seed	--	--	*	
<b>Activities (11)</b>					
Antianemic 1.5 g/day	Martindale's 28th				

Antiviral				
CNS-Stimulant				
Diuretic				
Hyperuricemic	Martindale's 28th			
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.			
Lithogenic				
Myocardiotonic				
Pesticide				
Vasodilator				

ALLANTOIC-ACID	Leaf	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
ALLANTOIN	Leaf	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

#### Activities (12)

Antidandruff	A.L.L. Hunting. Encyclopedia of Shampoo Ingredients. Micelle Press, Cranford NJ. 467 pp.
Antiinflammatory	
Antioxidant	
Antipeptic 30-130 mg/man/day	25 Dispensatory
Antipsoriac 2%	Martindale's 28th
Antiradicular	
Antiulcer	
Immunostimulant	
Keratolytic	Martindale's 28th
Sunscreen 0.10%	Jim Duke's personal files.
Suppurative	
Vulnerary	

ALPHA-TOCOPHEROL	Seed	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
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#### Activities (32)

Antialzheimeran	
Antiangular	
Antiarthritic	
Antiasthmatic	
Antiatherosclerotic	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Anticancer	
Anticataract	
Anticonvulsant Synergen	
Antidementia	
Antidiabetic	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Antiinfarctal	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Antiinfertility	
Antiischemic	
Antimaculitic	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuropathic	
Antioxidant 5 x quercetin	
Antioxidant IC34=10 uM	
Antiparkinsonian	
Antiradicular 5 x quercetin	
Antiretinotic	
Antirheumatic	
Antistroke	
Antitumor	
Antitumor (Bladder)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antitumor-Promoter	
Cancer-Preventive	
Cardioprotective	
Circulotonic	

ARABINOGLUCOSE	Seed	--	--	*
ARABINOSE	Seed	--	--	*
ARACHIDIC-ACID	Seed	--	--	*
ASH	Seed	--	37400.0	-0.32
ASPARAGINE	Seed	--	--	*

#### Activities (2)

Antisickling Ekeke, G.I. and Shode, F.O. 1988. Phenylalanine is the Predominant Antisickling Agent in Cajanus cajan Seed Extract. *Planta Medica* 56(1): 41, 1990.

Diuretic HerbalGram No. 17.

ASPARTIC-ACID	Seed	--	--	*
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#### Activities (3)

Antimorphinic	Martindale's 28th
Neuroexcitant	Martindale's 28th
Roborant	Merck 11th Edition

ATRACTYLIGENIN	Seed	--	--	*
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BETA-CAROTENE	Leaf	20.0	25.0	-1.03	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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#### Activities (53)

Allergenic	
Androgenic?	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
AntiPMS	
Antiacne	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiaging	
Antiarthritic	
Antiasthmatic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticarcinomic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticervicaldysplastic	
Anticorony 50 mg/man/2 days	
Antihyperkeratotic	
Antiichthyotic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antileukoplakic	
Antilipoperoxidant IC71=50 ug/ml	
Antilupus 150 mg/man/day/2 mos	Martindale's 28th
Antimaculitic	
Antimastitic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antioxidant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiozenic	
Antipapillomac	
Antiphotophobic 30-300 mg/man/day	Martindale's 29th
Antipyriasis	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiporphyrin 30-300 mg/man/day	Martindale's 28th
Antiproliferant	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antipsoriac	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiradicular	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antirheumatic	
Antistress	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antitumor	Simon, P.W. Carrots and Other Horticultural Crops as a Source of Provitamin A Carotenes. <i>HortScience</i> , 25(12): 1495, 1990.
Antitumor (Breast) IC45=60 ug/ml	
Antitumor (CNS) IC43=45 ug/ml	
Antitumor (Colon) IC43=45 ug/ml	
Antitumor (Lung) IC30=60 ug/ml	
Antitumor (Prostate)	
Antitumor (Stomach) IC26=45 ug/ml	
Antiulcer 12 mg 3x/day/man/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer 15,000-25,000 IU/day	
Antixerophthalmic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
COX-1-Inhibitor IC78=50 ug/ml	

Cancer-Preventive 22 ppm	Jim Duke's personal files.				
Chemopreventive					
Colorant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Gastroprotective					
Immunostimulant 180 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Interferon-Synergist					
Mucogenic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Phagocytotic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Prooxidant 20 ug/g	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Thymoprotective	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Ubiquit	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				

BETA-SITOSTEROL Seed 520.0 530.0 -0.43 \*

#### Activities (47)

Androgenic					
Angiogenic					
Anorexic	Martindale's 28th				
Antiademonic	Merck 11th Edition				
Antiandrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.				
Anticancer (Cervix)					
Anticancer (Lung)					
Antiedemic IC54=320 mg/kg orl					
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Antifertility	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				
Antigonadotropic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				
Antihyperlipoproteinaemic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Antiinflammatory					
Antileukemic					
Antilymphomeric					
Antimutagenic 250 ug/ml					
Antiphidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.				
Antioxidant IC44=10 uM					
Antiprogestational	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				
Antiprostaglandin 30 mg/day/12 wks					
Antiprostatadenomic	Merck 11th Edition				
Antiprostatic 10-20 mg 3 x/day/orl man					
Antipyretic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.				
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.				
Antitumor (Cervix)					
Antitumor (Lung)					
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.				
Apoptotic					
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> , 29(5): 1667-1670. 1990.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Caspase-8-Inducer					
Estrogenic					
Febrifuge	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.				
Gonadotropic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				
Hepatoprotective					
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th				
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th				
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.				
Hypolipidemic 2-6 g/day					
Pesticide					
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.				

Ulcerogenic 500 mg/kg ipr rat

BETA-TOCOPHEROL	Seed	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
CAFESTEROL	Seed	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
CAFESTOL	Seed	--	6000.0	*
<b>Activities (2)</b>				
Antiinflammatory	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Hypercholesterolemic				
CAFFEIC-ACID	Leaf	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
<b>Activities (102)</b>				
Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.			
Allergenic				
Analgesic				
AntiHIV EC50=200 ug/ml				
AntiLegionella				
Antiaid noviral	Economic & Medicinal Plant Research, 5: 207.			
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antiaging				
Antiatherogenic				
Antibacterial				
Anticancer				
Anticarcinogenic	Economic & Medicinal Plant Research, 6: 189.			
Antidepressant				
Antiedemic	Economic & Medicinal Plant Research, 6: 189.			
Antielastase IC50=93 um/l				
Antielastase IC50=86 ug/ml (475 uM)				
Antiescherichic				
Antiflu	Economic & Medicinal Plant Research, 5: 207.			
Antigonadotropic	Jim Duke's personal files.			
Antihemolytic 25 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.			
Antihepatoadenomic 200 ppm diet orl mus				
Antihepatotoxic				
Antiherpetic 50 ug/ml				
Antiherpetic EC50=>50 ug/ml				
Antihistaminic				
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.			
Antihyperthyroid				
Antiinflammatory				
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.			
Antileukotriene				
Antimelanogenic				
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.			
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.			
Antiphidic				
Antioxidant 50 uM				
Antioxidant IC57=30 ppm				
Antioxidant 1/3 quercetin				
Antioxidant 30 mM				
Antioxidant 1.3 x Vit. E				
Antioxidant 1/2 BHA				
Antiperioxidant IC50=44 uM	Planta Medica, 57: A54, 1991.			
Antiperioxidant IC35=200 ug/ml				
Antiperioxidant IC85=100 ug/ml				
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.			
Antiprostaglandin				

Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	Phytotherapy Research, 4: 73.
Antistaphylococcal	
Antistomatitic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	Cancer Research, 48: 5941.
Antiulcerogenic	
Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
COX-2-Inhibitor IC32=100 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
DNA-Protective	
Diuretic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Pesticide	
Prooxidant	
Prostaglandigenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. Fitoterapia 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. Fitoterapia 64(2): 134-136, 1993.
Sunscreen IC98=25 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. Fitoterapia 64(2): 134-136, 1993.
Tumorigenic	Jim Duke's personal files.
Vulnerary	
Xanthine-Oxidase-Inhibitor IC50=39.21 uM	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.

**Activities (102)**

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allergenic	
Analgesic	
AntiHIV EC50=200 ug/ml	
AntiLegionella	
Antidiadenoviral	Economic & Medicinal Plant Research, 5: 207.
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiaging	
Antiatherogenic	
Antibacterial	
Anticancer	
Anticarcinogenic	Economic & Medicinal Plant Research, 6: 189.
Antidepressant	
Antiedemic	Economic & Medicinal Plant Research, 6: 189.
Antielastase IC50=93 uM	
Antielastase IC50=86 ug/ml (475 uM)	
Antiescherichic	
Antiflu	Economic & Medicinal Plant Research, 5: 207.
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 25 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> , 36(3): 579-583. 1994.
Antihepatoadenomic 200 ppm diet orl mus	
Antihepatotoxic	
Antiherapeutic 50 ug/ml	
Antiherapeutic EC50=>50 ug/ml	
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene	
Antimelanogenic	
Antimutagenic	Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18.
Antinitrosaminic	Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18.
Antiphidic	
Antioxidant 50 uM	
Antioxidant IC57=30 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 30 mM	
Antioxidant 1.3 x Vit. E	
Antioxidant 1/2 BHA	
Antiperioxidant IC50=44 uM	Planta Medica, 57: A54, 1991.
Antiperioxidant IC35=200 ug/ml	
Antiperioxidant IC85=100 ug/ml	
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antiprostaglandin	
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> , 36(3): 579-583. 1994.
Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	Phytotherapy Research, 4: 73.
Antistaphylococcic	
Antistomatitic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	Cancer Research, 48: 5941.

Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp.
COX-2-Inhibitor IC32=100 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI,</i> 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed.</i> , Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London.</i> 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
DNA-Protective	
Diuretic	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp.
Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. <i>Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae).</i> Economic Botany 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. <i>Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables.</i> J. Agric. Food Chem. 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. <i>Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health,</i> Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. <i>Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health,</i> Ch.19.
Pesticide	
Prooxidant	
Prostaglandigenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. <i>Photodynamic damage prevention by some hydroxycoumarins.</i> Fitoterapia 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. <i>Photodynamic damage prevention by some hydroxycoumarins.</i> Fitoterapia 64(2): 134-136, 1993.
Sunscreen IC98=25 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. <i>Photodynamic damage prevention by some hydroxycoumarins.</i> Fitoterapia 64(2): 134-136, 1993.
Tumorigenic	Jim Duke's personal files.
Vulnerary	
Xanthine-Oxidase-Inhibitor IC50=39.21 uM	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy.</i> Churchill Livingston, Edinburgh.

CAFFEINE	Seed	600.0	32000.0	0.33	*
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#### Activities (62)

(+)-Inotropic	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants.</i> 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Adenosine-Antagonist	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph. Alternative Therapies,</i> 6(3): 61-82.
Analeptic 200 scu mus	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook.</i> (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Analgesic-Synergist	
Antiapneic	Martindale's 29th
Antiapoptotic	
Antiasthmatic 5-10 mg/kg orl/man	Martindale's 29th
Anticarcinogenic	
Anticariogenic	
Antidermatitic	Martindale's 29th
Antiemetic	Williamson, E. M. and Evans, F. I. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations.</i> Revised Ed.. Saffron Walden. the C. W. Daniel Co..

Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antiflu	Economic & Medicinal Plant Research, 5: 198.
Antiherpetic	
Antihypotensive 250 mg/day/orl/man	Martindale's 29th
Antinarcotic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antibiobesity	
Antioxidant	
Antirhinitic 140 mg/day/orl/man	Martindale's 29th
Antiserotonergic 40 ipr rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Antiserotonergic 40 scu rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Antitumor	
Antitumor (Lung)	
Antivaccinia	
Antiviral	Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Apoptotic	
Arrhythmigenic 1,500 mg/man	
CNS-Stimulant 100 orl mus	
CNS-Stimulant 30 orl rat	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardiotonic 10-25 orl dog	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Cardiotonic 65-500 orl cat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Catabolic	Abstract (See species file)
Choleretic	
Coronary-Dilator	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82.
Diuretic	
Energizer 20-200 mg/man	
Ergotamine-Enhancer	Martindale's 29th
FLavor FEMA 125	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Herbicide	
Hypertensive	
Hypoglycemic	
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lypolytic	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Myorelaxant	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82.
Neurotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature. The Risk of Herbal Preparations</i> . Ann. Intern. Med. 117(2):165-6; Huxtable, R.
Pesticide	
Phosphodiesterase-Inhibitor	
Pyrogenic 60 mg/day oral hmn	Daroca, P., Rodriguez, J., Reano, M., Canto, G., Miranda, P. 1996. <i>Fever From Caffeine</i> . Allergy, 51(3): 189-191.
Pyrogenic 13.3 mg/kg ipr rbt	Dascombe, M. J. 1977. Effects of Methylxanthine Drugs on Pyrogen-Induced Hyperthermia. <i>Eur J Pharmacol</i> , 45: 389-392.
Pyrogenic 15 mg/kg ipr cat	Dascombe, M. J. 1977. Effects of Methylxanthine Drugs on Pyrogen-Induced Hyperthermia. <i>Eur J Pharmacol</i> , 45: 389-392.
Respirastimulant	
Spasmogenic 1,500 mg/man	
Stimulant	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature. The Risk of Herbal Preparations</i> . Ann. Intern. Med. 117(2):165-6; Huxtable, R.
Tachycardic 1,500 mg/man	
Teratogenic 14 orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Topoisomerase-I-Inhibitor 0.1 nM	Tohda, H., Zhao, J. H., Oikawa, A. 1992. A Possible Involvement of DNA Topoisomerase I in 'Caffeine Effect' After Ultraviolet Irradiation. <i>Tohoku J Exp Med</i> , 168: 129-132.
Topoisomerase-I-Inhibitor 75 uM	Shin, C. G., Strayer, J. M., Wani, M., Snapka, R. M. 1990. Rapid Evaluation of Topoisomerase Inhibitors: Caffeine Inhibition of Topoisomerases in vivo. <i>Teratogen Carcinogen Mutagen</i> , 10: 41-52.
Topoisomerase-II-Inhibitor 99 mM	Shin, C. G., Strayer, J. M., Wani, M., Snapka, R. M. 1990. Rapid Evaluation of Topoisomerase Inhibitors: Caffeine Inhibition of Topoisomerases in vivo. <i>Teratogen Carcinogen Mutagen</i> , 10: 41-52.
Vasodilator	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).

CAFFEOYL-3-QUINIC-ACID	Seed	--	--	*	
CAFFETANNIC-ACID	Seed	--	84600.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
CAHWEOL	Seed	--	--	*	
CALCIUM	Seed	1200.0	1281.0	-0.53	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

#### Activities (28)

AntiPMS 1 g/day					
Antiallergic 500 mg/day					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antianxiety					
Antiarrhythmic 500-1,500 mg					
Antiarthritic 1,000 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiatherosclerotic 500 mg/day					
Anticlimacteric 1,000-1,500 mg/day					
Antidepressant					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Aluminum)					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Lead)					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihyperkinetic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihypertensive					
Antiinsomniac					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimenopausal 1,000-1,500 mg/day					
Antiobesity					
Antiosteoporotic 500-2,000 mg/day					
Antiperiodontitic 750 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antirheumatic 1,000 mg/day					
Antistress 500-1,500 mg/day					
Antitic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anxiolytic 500-1,500 mg/day					
Calcium-Channel-Blocker					
Diuretic					
Hypocholesterolemic 500 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Hypotensive 1 g/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Laxative 1,000-1,200 mg					
Tranquilizer 500-1,500 mg/day					
Vasodilator					

CALCIUM	Leaf	19000.0	20406.0	0.13	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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#### Activities (28)

AntiPMS 1 g/day					
Antiallergic 500 mg/day					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antianxiety					
Antiarrhythmic 500-1,500 mg					
Antiarthritic 1,000 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiatherosclerotic 500 mg/day					
Anticlimacteric 1,000-1,500 mg/day					
Antidepressant					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Aluminum)					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Lead)					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihyperkinetic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihypertensive					
Antiinsomniac					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimenopausal 1,000-1,500 mg/day					
Antiobesity					
Antiosteoporotic 500-2,000 mg/day					
Antiperiodontitic 750 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antirheumatic 1,000 mg/day					
Antistress 500-1,500 mg/day					
Antitic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anxiolytic 500-1,500 mg/day					
Calcium-Channel-Blocker					
Diuretic					
Hypocholesterolemic 500 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Hypotensive 1 g/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Laxative 1,000-1,200 mg					

## Vasodilator

CAMOESTANOL	Seed	--	--		*
CAMPESTANOL	Seed	--	--		List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
CAMPESTEROL	Seed	110.0	120.0	-0.37	*
<b>Activities (2)</b>					
Antioxidant IC37=10 uM					
Hypocholesterolemic	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.				
CAPRINIC-ACID	Seed	--	--		*
CARBOHYDRATES	Seed	600000.0	728000.0	0.81	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
CARBOHYDRATES	Leaf	666000.0	712000.0	0.8	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
CARNAUBIC-ACID	Seed	--	--		*
CELLULOSE	Seed	--	--		*
<b>Activities (1)</b>					
Hemostat				Martindale's 29th	
CHLOROGENIC-ACID	Seed	50000.0	80000.0	2.1	*
<b>Activities (77)</b>					
Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity)	Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of Chrysanthemum indicum L. <i>Chem Pharm Bull</i> , 47(3): 340-345.				
Allelochemical					
Allergenic					
Analgesic					
AntiEBV	Economic & Medicinal Plant Research, 6: 189.				
AntiHIV	Economic & Medicinal Plant Research, 6: 189.				
AntiLegionella					
Antiatherosclerotic					
Antibacterial					
Anticancer (Colon)					
Anticancer (Forestomach)					
Anticancer (Liver)					
Anticancer (Skin)					
Anticarcinogenic					
Antidiabetic					
Antifeedant					
Antigenotoxic					
Antigonadotropic	Jim Duke's personal files.				
Antihemolytic 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.				
Antihepatotoxic					
Antiherpetic	Economic & Medicinal Plant Research, 5: 194.				
Antihistaminic					
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.				
Antihyperthyroid					
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.				
Antileukotriene					
Antimelanogenic					
Antimutagenic					
Antinitrosaminic					
Antioxidant IC53=200 ppm	Huang, M-T., and Ferraro, T. Phenolic Compounds in Food and Cancer Prevention. Phenolic Compounds in Food and Their Effects on Health, Ch.2 p.21.				
Antioxidant IC80=12 uM					
Antioxidant IC50=54.2 uM					
Antiperoxidant IC50=36 uM	Planta Medica, 57: A54, 1991.				
Antipolio	Jim Duke's personal files.				
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.				
Antiradicular 9 x quercetin					
Antiseptic					

Antithyroid	Jim Duke's personal files.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC25=10 uM	
Antiulcer	Economic & Medicinal Plant Research, 6: 189.
Antiviral	Vlietinck, A.J. and Dommisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Autotoxic	
CNS-Active	Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
CNS-Stimulant 1/6 Caffeine	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Clastogenic	Friedman, M. and Dao, L. 1990. Effect of Autoclaving and Conventional and Microwave Baking on the Ergot Alkaloid and Chlorogenic Acid Contents of Morning Glory ( <i>Ipomoea tricolor</i> Cav. cv.) Heavenly Blue Seeds. J. Agric. Food Chem. 38: 805-808.
Collagen-Sparing	
Diuretic	
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Hepatoprotective	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Histamine-Inhibitor	
Hypoglycemic	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Interferonogenic	Economic & Medicinal Plant Research, 1: 124.
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC23=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
NO-Genic	
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Sunscreen	
Sweetener	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Vulnery	

#### CHOLESTANOL

Seed -- -- \*

#### CHOLESTEROL

Seed -- -- \*

#### Activities (1)

Antioxidant IC43=10 uM

#### CHOLINE

Seed -- 300.0 -1.29 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

#### Activities (20)

Antialzheimeran 5-16 g/man/day

Antichoreic

Anticirrhotic 6,000 mg/man/day

Anticystinuric

Antidementia

Antidiabetic

Antidyskinetic 150-200 mg/kg/man/day Martindale's 28th

Antihomocysteine

Antimanic 15-30 g/man/day/orl Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antinociceptive

Antisteatotic

Cerebrotonic				
Cholinergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.			
Hepatoprotective				
Hypotensive				
Ileorelaxant				
Lipotropic				
Memorigenic				
Parasympathomimetic (1/1,000th acetylcholine)	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.			

CITRIC-ACID	Seed	--	--	*
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#### Activities (23)

Allergenic				
Alpha-Amylase-Inhibitor				
Antiaphthic 20,000 ppm	Martindale's 28th			
Antiatherosclerotic				
Antibacterial				
Anticalculic				
Anticoagulant	Merck 11th Edition			
Antileishmanic				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
Antioxidant Synergist	Merck 11th Edition			
Antiseborrheic				
Antiseptic	Martindale's 29th			
Antitubercular				
Antitumor	Economic & Medicinal Plant Research, 6: 235.			
Disinfectant	Martindale's 29th			
Flavor FEMA 370-4,400	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry			
Hemostat				
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.			
Laxative?	Lawrence Review of Natural Products, Sep-91.			
Litholytic	Martindale's 29th			
Mycobactericide				
Odontolytic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.			
Refrigerant	Martindale's 28th			

CITROSTADIENOL	Seed	--	--	*
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#### Activities (1)

Antirheumatic 2-5 mg/man				
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COFFEASTEROL	Seed	--	--	*
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CYANIDIN	Plant	--	--	*
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#### Activities (7)

Allelochemical IC90=1 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antioxidant ID50=3.5-22 uM	
Antioxidant 4.4 x Vit. E	
Metal-Chelator (Copper)	
Pesticide	
Pigment	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Prooxidant	

CYCLOEUCALENOL	Seed	--	--	*
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#### Activities (3)

Antibacterial	
Antistaphylococcic	
Pesticide	

**Activities (13)**

AntiAddisonian	
Antibiotic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Anticataract	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticytotoxic	
Antiophthalmic	Martindale's 28th
Antioxidant	Jim Duke's personal files.
Antitumor	
Antiulcer	Martindale's 29th
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Detoxicant	Merck 11th Edition
Glutathionergic	
Ophthalmic-Antialkali	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Pesticide	

## CYSTINE

Seed -- -- \*

**Activities (2)**

Adjuvant		Merck 11th Edition
Antihomocystinuric		Martindale's 29th

DATURIC-ACID	Seed	--	--	*
DEXTRINS	Seed	--	8700.0	*
DIHYDROLANASTEROL	Seed	--	--	*
DIHYDROSITOSTEROL	Seed	--	--	*
DIMETHYL-5-ALPHA-CHOLEST-7-EN-3-BETA-OL	Seed	--	--	*
DIMETHYL-5-ALPHA-CHOLEST-8-EN-3-BETA-OL	Seed	--	--	*
ENT-16-KAUREN-19-OL	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
EO	Seed	1000.0	2000.0	-0.53
EUGENOL	Seed	--	--	Jim Duke's personal files.

**Activities (76)**

Acaricide LD50=5.47 ug/sq cm cf DEET at 37.59 ug/sq cm	
Allergenic	
Analgesic	Merck 11th Edition
Anesthetic 200-400	Phytotherapy Research, 4: 93.
AntiTNF	
Antiaggregant IC50=0.3 uM	Phytotherapy Research, 4: 93.
Antiarachidonate	
Antibacterial 500 ppm	Valnet, J. 1982. <i>The Practice of Aromatherapy.</i> Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.
Antibacterial MBC=400 ug/ml	
Anticonvulsant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antiedemic 100	Phytotherapy Research, 4: 95.
Antiestrogenic	
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents,</i> CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antigenotoxic 50-500 mg/kg orl mus	
Antiherpetic IC50=16.2-25.6 ug/ml	
Antiinflammatory (11 uM) IC~97=1,000 uM	
Antikeratotic IC50=16.2-25.6 ug/ml	
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antinitrosating	
Antioxidant IC65=30 ppm	
Antioxidant 10 uM	

Antiprostaglandin IC50=9.2 mM	
Antipyretic 3 ml/man/day	
Antiradicular EC50=2 ul/l	
Antisalmonella MIC=400 ug/ml	
Antiseptic 3 ml/man/day	
Antiseptic 400 ug/ml	
Antispasmodic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antistaphylococcc	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles <i>Artemisia</i> 344pp.Maffei,M.(Ed)2002. <i>Vetiveria</i> .The Genus <i>Vetiveria</i> .Taylor&Francis,NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999. <i>Tea Tree</i> .The Genus <i>Melaleuca</i> .Harwood Acad.Pub.Amsterdam,Netherlands.
Antithromboxane	Lawrence Review of Natural Products, Jul-87.
Antitumor	Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992.
Antiulcer	
Antiviral IC50=16.2-25.6 ug/ml	
Apifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
CNS-Depressant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
COX-1-Inhibitor IC97=1,000 uM	
COX-2-Inhibitor IC>97=1,000 uM	
COX-2-Inhibitor IC50=129 uM	
Calcium-Antagonist IC50=224 uM	
Calcium-Antagonist IC50=200 uM gpg	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	<i>Phytotherapy Research</i> , 4: 93.
Carcinogenic?	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Choleretic	
Cytochrome-P450-Inhibitor	Pizzorno, J. 1998. <i>Total Wellness</i> . Prima Health, a division of Prima.
Cytotoxic 25 ug/ml	<i>Phytotherapy Research</i> , 4: 93.
Dermatitigenic	
Enterorelaxant	<i>J. Aromatherapy</i> 4: 22.
FLavor FEMA 10-500	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Hepatoprotective 100 ppm	
Herbicide	
Insecticide	
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	
Juvabional	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvicide	
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=2,000 ug/ml	Shoyakugaku Zasshi, 44: 183.
Neurotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature. The Risk of Herbal Preparations</i> . <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Prostaglandin-Synthesis-Inhibitor 1 mM rbt	Chen, S. J., Wang, M. H., Chen, I. J. 1996. Antiplatelet and Calcium Inhibitory Properties of Eugenol and Sodium Eugenol Acetate. <i>Gen Pharmacol</i> , 27(4): 629-633.
Prostaglandin-Synthesis-Inhibitor IC50=9.2 uM	
Sedative	
Termiticide LD100=5 mg/g	
Trichomonicide LD100=300 ug/ml	
Trichomonistat IC50=10 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Trypsin-Enhancer	Lawrence Review of Natural Products, Dec-93.
Ulcerogenic	<i>Phytotherapy Research</i> , 4: 93.
Varroacide	
Vasodilator	
Vermifuge	

FAT	Seed	74000.0	170000.0	-0.5	*
FAT	Leaf	55000.0	59000.0	0.05	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

**Activities (15)**

Angiotensin-Receptor-Blocker	
Antidiabetic	
Antihypertensive	
Antiobesity	
Antitumor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Blocker	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Diuretic	
Hypocholesterolemic	
Hypotensive 10 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypouricemic	
Laxative	
Vasodilator	

FIBER

Leaf

175000.0 187000.0 0.31 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

**Activities (15)**

Angiotensin-Receptor-Blocker	
Antidiabetic	
Antihypertensive	
Antiobesity	
Antitumor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Blocker	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Diuretic	
Hypocholesterolemic	
Hypotensive 10 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypouricemic	
Laxative	
Vasodilator	

FUFURYL-ALCOHOL

Seed -- --

ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

FURFURALDEHYDE

Seed -- --

ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

GALACTAN

Seed -- --

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GALACTOMANNAN

Seed -- --

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GAMMA-SITOSTEROL

Seed -- --

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GAMMA-TOCOPHEROL

Seed -- --

Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley &amp; Sons, New York. 649 pp.

**Activities (14)**

AntiCRP	
Antiatherosclerotic	
Anticancer	
Antiinflammatory	
Antioxidant 10-15 ug/g	
Antioxidant IC43=10 uM	
Antiprostaglandin	
Antitumor	
Cardioprotective	
Cyclooxygenase-Inhibitor	
Hypocholesterolemic	
NO-Inhibitor	
Natriuretic	
PKC-Inhibitor	

GLUCOGALACTOMANNAN

Seed -- --

\*

**Activities (8)**

Antialkali? 500-1,000 mg/day/orl/man	Martindale's 29th
Antiepileptic	
Antihyperammonemic	Martindale's 29th
Antilithic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic 125-250 mg 3 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiretardation	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anxiolytic	Merck 11th Edition
Neurotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

## GUAIACOL

Seed -- -- CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

**Activities (18)**

Anesthetic	
Antibacterial 8,000 ppm	Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.
Antidermatitic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antieczemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiesophagitic	Martindale's 29th
Antiseptic	Martindale's 29th
Antituberculic	
Cardiodepressant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Cardiotonic	
Dermal	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Emetic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Expectorant 0.3-0.6 ml/man	Martindale's 28th
FLavor FEMA <1-1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	
Pesticide	
Prostaglandin-Synthesis-Inhibitor IC50=57 uM	Alanko, J., et al. 1999. Modulation of Arachidonic Acid Metabolism by Phenols: Relation to their Structure and Antioxidant/Prooxidant Properties. Free Radical Biol Med, 26(1/2): 193-201.
Transdermal	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

## GUANOSINE

Seed -- -- \*

## HEMICELLULOSE

Seed -- -- \*

## HOMOCELLULOSE

Seed -- -- \*

## HYDROGEN-SULFIDE

Seed -- -- \*

## HYPOXANTHINE

Seed -- -- \*

## IRON

Seed 29.0 31.0 -0.56 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

**Activities (6)**

Antiakathisic	Martindale's 29th
Antianemic	Martindale's 29th
Anticancer	
Anticheilitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimennorrhagic 100 mg/day/wmn/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Prooxidant	

## IRON

Leaf 966.0 1032.0 1.7 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

**Activities (6)**

Antiakathisic	Martindale's 29th
Antianemic	Martindale's 29th
Anticancer	
Anticheilitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimennorrhagic 100 mg/day/wmn/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

ISOCHLOROGENIC-ACID	Seed	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
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#### Activities (4)

Antioxidant	Phenolic Compounds in Food and Their Effects on Health, 64.			
Antiseptic	J. Nat. Prod. 46(5).			
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Pesticide				

ISOEUGENOL	Seed	--	--	Jim Duke's personal files.
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#### Activities (16)

Allergenic				
AntiTNF				
Antiaggregant IC50=0.72 uM	Laekeman, G.M., Van Hoof, L., Haemers, A., Vanden Berghe, D.A., Herman, A.G., and Vlietinck, A.J. Eugenol a Valuable Compound for In Vitro Experimental Research and Worthwhile for Further In Vivo Investigation. <i>Phytotherapy Research</i> 4(3): 93, 1990.			
Antiinflammatory				
Antioxidant IC79=30 ppm				
Antitumor				
Bacteristat				
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Candidistat				
Cytotoxic 25 ug/ml	Laekeman, G.M., Van Hoof, L., Haemers, A., Vanden Berghe, D.A., Herman, A.G., and Vlietinck, A.J. Eugenol a Valuable Compound for In Vitro Experimental Research and Worthwhile for Further In Vivo Investigation. <i>Phytotherapy Research</i> 4(3): 93, 1990.			
Fungistat 100 ug/ml	Laekeman, G.M., Van Hoof, L., Haemers, A., Vanden Berghe, D.A., Herman, A.G., and Vlietinck, A.J. Eugenol a Valuable Compound for In Vitro Experimental Research and Worthwhile for Further In Vivo Investigation. <i>Phytotherapy Research</i> 4(3): 93, 1990.			
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC			
Motor-Stimulant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC			
Pesticide				
Sedative	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC			
Trichomonistat IC50=10 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.			

KAHWEOL	Seed	--	3000.0	*
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L-ASPARAGINE	Fruit	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
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L-ASPARTIC-ACID	Fruit	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
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LANOSTEROL	Seed	--	--	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
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#### Activities (1)

Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
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LIGNOCERIC-ACID	Seed	--	--	*
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#### Activities (1)

Antihepatotoxic				
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LINOLEIC-ACID	Seed	--	--	*
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#### Activities (27)

5-Alpha-Reductase-Inhibitor				
AntiMS	Economic & Medicinal Plant Research, 6: 189.			
Antiacne				
Antialopetic				
Antianaphylactic	Economic & Medicinal Plant Research, 6: 189.			
Antiandrogenic				
Antiarteriosclerotic				
Antiarthritic	Economic & Medicinal Plant Research, 6: 189.			
Anticorony	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Antieczemic	Economic & Medicinal Plant Research, 6: 189.			
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.			
Antigranular				

Antiinflammatory IC50=31  
uM

Antileukotriene-D4 IC50=31  
uM

Antimenorrrhagic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Science News, 146: 421.
Comedolytic	
Hepatoprotective	
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Immunomodulator	Economic & Medicinal Plant Research, 6: 189.
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Metastatic	Science News, 146: 421.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Propecic	

LINOLENIC-ACID	Seed	33300.0	72000.0	0.68	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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M-CRESOL	Seed	--	--		Jim Duke's personal files.
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#### Activities (8)

Antiseptic	Merck 11th Edition
Fumigant	Merck 11th Edition
Hemolytic 3,000 ppm	Martindale's 28th
Irritant	Martindale's 28th
Parasiticide	
Perfumery 0.10%	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Rodenticide LD50=1,100 cut rat	

MANNAN	Seed	--	--	*
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MANNOSE	Seed	--	--	*
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#### Activities (3)

AntiUTI	
Antiadhesive	
Anticystitic 0.25-1 tsp 3-4 x/day orl man	

METHIONINE	Seed	--	--	*
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#### Activities (15)

Anticataract	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antidote (Acetaminophen) 10 g/16hr/man/orl	Martindale's 29th
Antidote (Paracetamol) 10 g/16hr/man/orl	Martindale's 29th
Antieczemic	
Antihepatotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antioxidant	
Antiparkinsonian 1-5 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Emetic	Martindale's 29th
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Glutathionigenic	Martindale's 29th
Hepatoprotective	
Lipotropic	Merck 11th Edition
Urine-Acidifier 200 mg/3x/day/man/orl	Martindale's 28th
Urine-Deodorant	Martindale's 29th

METHYL-1-5-ALPHA-STIGMAST-7-EN-3-BETA-OL	Seed	--	--	*
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MYRISTIC-ACID	Seed	--	--	*
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#### Activities (6)

Antioxidant IC71=60
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Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Hypercholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. <i>CRC Handbook of Lipids in Human Nutrition.</i> CRC Press, Boca Raton, FL. 233 pp.)
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.

N-NONACOSANE	Seed	--	--	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
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#### Activities (1)

Antimutagenic Economic & Medicinal Plant Research, 6: 235.

NIACIN	Seed	13.0	14.0	-0.86	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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#### Activities (39)

Allergenic	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
AntiLyme 50 mg/day	Duke, J. A. Write ups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
AntiMeniere's	
AntiRaynaud's 1,500-4,000 mg/day	
Antiacrodynamic	
Antiallergic 50 mg/2x/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antialzheimeran	
Antiambyopic	
Antianginal	
Anticataract	
Antichilblain	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Anticonvulsant 3 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antidementia	
Antidermatitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antidiabetic	
Antidysphagic	
Antiepileptic 3 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antihangover 50 mg	
Antihistaminic 50 mg 2x/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antihyperactivity 1.5-6 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiinsomnic 1 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antineuragic	
Antiparkinsonian 100 mg/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antipellagric	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antiscotomic	
Antispasmodic 100 mg 2x/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antivertigo	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Circulotonic	
Fibrinolytic	
Hepatoprotective	
Hepatotoxic	
Hypocholesterolemic 50-100 mg 3x/day	
Hypoglycemic	
Hypolipidemic	
Sedative	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Serotonergic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Vasodilator	Martindale's 29th

NIACIN	Leaf	52.0	56.0	-0.5	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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#### Activities (39)

Allergenic	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
AntiLyme 50 mg/day	Duke, J. A. Write ups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
AntiMeniere's	
AntiRaynaud's 1,500-4,000 mg/day	
Antiacrodynamic	
Antiallergic 50 mg/2x/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antialzheimeran	

Antiangular					
Anticataract					
Antichilblain					Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Anticonvulsant 3 g/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antidementia					Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antidermatitic					
Antidiabetic					
Antidysphagic					
Antiepileptic 3 g/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antihangover 50 mg					
Antihistaminic 50 mg 2x/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antihyperactivity 1.5-6 g/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiinsomnic 1 g/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antineuragic					
Antiparkinsonian 100 mg/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antipellagric					Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antiscrotomic					
Antispasmodic 100 mg 2x/day					Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antivertigo					
Cancer-Preventive					Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective					
Circulotonic					
Fibrinolytic					
Hepatoprotective					
Hepatotoxic					
Hypocholesterolemic 50-100 mg 3x/day					Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypoglycemic					
Hypolipidemic					Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Sedative					
Serotonergic					Martindale's 29th
Vasodilator					

NITROGEN              Seed    16000.0    23000.0    -0.09    ANON. 1948-1976. *The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi.* 11 volumes.

O-CRESOL              Seed    --    --    Jim Duke's personal files.

#### Activities (6)

Allelochemical IC50=0.36 mM	Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiseptic	Merck 11th Edition
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Pesticide	
Rodenticide LD 50=620 cut rat	

O-XYLENOL              Seed    --    --    Jim Duke's personal files.

OBTUSIFOLIOL              Seed    --    --    \*

OLEIC-ACID              Seed    5920.0    12800.0    -0.87    \*

#### Activities (18)

5-Alpha-Reductase-Inhibitor	
Allergenic	
Alpha-Reductase-Inhibitor	
Anemiogenic	
Antialope cic	
Antiandrogenic	
Antiinflammatory IC50=21 uM	
Antileukotriene-D4 IC50=21 uM	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic 5 ml/man	
Dermatitigenic	
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Merck 11th Edition
Percutaneostimulant	Seki, T., Toeda, C., Kawaguchi, T., Juni, K., Sugibayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. <i>Chem. Pharm. Bull.</i> 38(11): 3086-3089, 1990.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Propecic	

OXALIC-ACID	Fruit	--	154.0	-0.3	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. <i>The Medicinal and Poisonous Plants of Southern and Eastern Africa</i> . E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.
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#### Activities (9)

Acaricide	
Antiseptic	
CNS-Paralytic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Fatal	Martindale's 29th
Hemostatic	Merck 11th Edition
Irritant	
Pesticide	
Renotoxic	Merck 11th Edition
Varroacide	

#### P-COUMARIC-ACID

P-COUMARIC-ACID	Plant	--	--	*
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#### Activities (25)

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allelopathic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antibacterial	Pharmazie, 46: 156, 1991.
Anticlastogen	
Antifertility	
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antinitrosaminic	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Antioxidant IC24=30 ppm	
Antioxidant 1/3 BHA	
Antiperoxidant IC50=>100 uM	Planta Medica, 57: A54, 1991.
Antiseptic	
Antispasmodic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Antitumor	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Diaphoretic?	Lawrence Review of Natural Products, Dec-90.
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Lipoxygenase-Inhibitor IC11=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem</i> . 38: 688-690.
Pesticide	
Prostaglandogenic	
Prostaglandin-Synthesis-Inhibitor	
Tyrosinase-Inhibitor ID50=3,650 uM	

#### P-CRESOL

P-CRESOL	Seed	--	--	Jim Duke's personal files.
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#### Activities (8)

Allelochemical IC50=1.13 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiseptic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
FLavor FEMA <1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Parasiticide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Pesticide	
Rodenticide LD50=1,100 cut rat	

P-XYLENOL	Seed	--	--	Jim Duke's personal files.	
PALMITIC-ACID	Seed	--	23680.0	-0.21	
<b>Activities (13)</b>					
5-Alpha-Reductase-Inhibitor					
Antialopelcic					
Antiandrogenic					
Antifibrinolytic				Economic & Medicinal Plant Research, 1: 53.	
Antioxidant IC40=60					
FLavor FEMA 1				Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry	
Hemolytic				Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.	
Hypercholesterolemic				Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. <i>CRC Handbook of Lipids in Human Nutrition</i> . CRC Press. Boca Raton, FL. 233 pp.)	
Lubricant				Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
Nematicide				Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.	
Pesticide					
Propecic					
Soap				Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
PECTIN	Seed	--	--	*	
<b>Activities (24)</b>					
Antiatheromic 15 g/man/day				Cerda, J.J. <i>Pectin in Health and Disease</i> . HortScience, 25(12): 1485, 1990.	
Antibacterial					
Antidiabetic 10 g/man/day/orl					
Antidiarrheic				Merck 11th Edition	
Antienteric					
Antigallstone					
Antigastritic					
Antilithic					
Antimetastatic					
Antimutagenic					
Antiobesity				Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.	
Antitumor (Colon)					
Antitumor (Prostate)					
Antitussive					
Antiulcer					
Cancer-Preventive				Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.	
Chemopreventive					
Demulcent					
Fungicide				Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.	
Hemostat					
Hypocholesterolemic					
Hypoglycemic				Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.	
Peristaltic					
Pesticide					
PENTOSANE	Seed	--	--	*	
PENTOSANS	Seed	--	--	*	
PHOSPHORUS	Seed	1780.0	1900.0	-0.91	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
<b>Activities (4)</b>					
Antiosteoporotic				Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Anxiolytic					
Immunostimulant				Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Osteogenic				Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
PHOSPHORUS	Leaf	1700.0	1816.0	-0.58	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
<b>Activities (4)</b>					
Antiosteoporotic				Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Anxiolytic					
Immunostimulant				Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Osteogenic				Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	

PHOTOSTEROL	SEED	7.0	570.0	-1.33	
PHYSTOSTEROLS	Seed	920.0	940.0	-0.39	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
<b>Activities (2)</b>					
Antiprostatic Hypocholesterolemic					
POLYAMINES	Seed	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
PROTEIN	Seed	98700.0	140000.0	-0.83	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
PROTEIN	Leaf	--	99000.0	-1.13	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
PUTRESCINE	Seed	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
RAFFINOSE	Seed	--	--	*	
<b>Activities (1)</b>					
Flatugenic	Singh, J., Gupta, K., and Arora, S.K. 1993. Changes in the anti-nutritional factors of developing seeds and pod walls of fenugreek ( <i>Trigonella foenum graecum L.</i> ). Plant Foods for Human Nutrition. 46: 77-84, 1994.				
RHAMNOSE	Seed	--	--	*	
RIBOFLAVIN	Seed	--	1.0	-0.97	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
<b>Activities (15)</b>					
AntiLyme 50 mg/day					
Antiarabiflavinotic 2-10 mg/day orl					Martindale's 28th
Anticarpal-Tunnel 50 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 15 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticephalagic					
Anticervicaldysplastic 1.6-10 mg/day					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticheilitic					
Antidecubitic					
Antiglossitic					
Antikeratitic					
Antimigraine					
Antioxidant					
Antipellagric					
Antiphotophobic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
RIBOFLAVIN	Leaf	--	2.0	-0.17	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
<b>Activities (15)</b>					
AntiLyme 50 mg/day					
Antiarabiflavinotic 2-10 mg/day orl					Martindale's 28th
Anticarpal-Tunnel 50 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 15 mg/day					Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticephalagic					
Anticervicaldysplastic 1.6-10 mg/day					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticheilitic					
Antidecubitic					
Antiglossitic					
Antikeratitic					
Antimigraine					
Antioxidant					
Antipellagric					
Antiphotophobic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
SACCHAROSE	Seed	--	--	*	
SALICYLATES	Seed	--	10.0	-0.29	*
<b>Activities (7)</b>					
Antiaggregant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				

Antipyretic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Antiuricosuric	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Hyperglycemic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Hypoglycemic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Uricosuric	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.

SCOPOLETIN	Seed	--	--	*
<b>Activities (44)</b>				
Aldose-Reductase-Inhibitor IC50=6.2 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387			
Allelochemical IC89=2 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.			
Analgesic				
Anesthetic	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.			
Antiadrenergic	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.			
Antiaflatoxin IC50=65 uM				
Antiaflatoxin 11.4 ppm				
Antiarrhythmic				
Antiasthmatic				
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Antibronchoconstrictor				
Anticholinergic				
Antiedemic				
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
Antihepatotoxic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.			
Antiinflammatory ED 1-10 ug/ear				
Antileukotrieneogenic				
Antimutagenic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.			
Antioxidant				
Antiproliferant				
Antiprostaglandin				
Antiseptic				
Antispasmodic				
Antitumor 2.9 ug/ml				
Apoptotic				
Bronchorelaxant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.			
CNS-Depressant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.			
CNS-Stimulant	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. <i>The Medicinal and Poisonous Plants of Southern and Eastern Africa</i> . E. & S. Livingstone, Ltd. Edinburgh & London. 1457 pp.			
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Cholagogue	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.			
Choleretic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.			
Cytotoxic				
Fungicide 2 mM				
Hepatoprotective	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.			
Herbicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Hypoglycemic	Economic & Medicinal Plant Research, 6: 165			
Hypotensive				
MAO-Inhibitor				
Musculotropic	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.			
Myorelaxant				
Pesticide				
Phytoalexin				
Phytohormonal	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Uterosedative	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.			

SINAPIC-ACID	Plant	--	--	*
<b>Activities (9)</b>				
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Antioxidant IC27=30 ppm				
Antiperoxynitrite IC39=5 uM				

uM					
Antiperoxynitrite IC75=100 uM					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Pesticide					
SPERMIDINE	Seed	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.	
<b>Activities (1)</b>					
Antioxidant					
SPERMINE	Seed	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.	
<b>Activities (1)</b>					
Antioxidant					
SQUALENE	Seed	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.	
<b>Activities (10)</b>					
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antioxidant					
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Chemopreventive					
Immunostimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Lipoxygenase-Inhibitor	Chemical Express, 7: 297, 1992.				
Perfumery	Merck 11th Edition				
Pesticide					
Sunscreen					
STACHYOSE	Seed	--	--	*	
<b>Activities (1)</b>					
Flatogenic	Singh, J., Gupta, K., and Arora, S.K. 1993. Changes in the anti-nutritional factors of developing seeds and pod walls of fenugreek ( <i>Trigonella foenum graecum</i> L.). Plant Foods for Human Nutrition. 46: 77-84, 1994.				
STEARIC-ACID	Seed	5920.0	12800.0	-0.29	*
<b>Activities (8)</b>					
5-Alpha-Reductase-Inhibitor					
Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
FLavor FEMA 2-4,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)				
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Propeptic					
Suppository	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
STIGMASTEROL	Seed	240.0	270.0	-0.19	*
<b>Activities (12)</b>					
Antihepatotoxic					
Antiinflammatory	Lawrence Review of Natural Products, 1995				
Antinociceptive					
Antiphidic 2.3 mg ipr mus	Economic & Medicinal Plant Research, 5: 363.				
Antioxidant IC33=10 uM					
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . Plant Science, 75: 161-165, 1991.				
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . Phytochemistry. 29(5): 1667-1670. 1990.				

Estrogenic

Hypocholesterolemic Nigg, H.N. and Seigler, D.S., eds. 1992. *Phytochemical Resources for Medicine and Agriculture*. Plenum Press, New York. 445 pp.

Ovulant

Sedative

SUGAR	Seed	--	4300.0	-0.9	ANON. 1948-1976. <i>The Wealth of India raw materials</i> . Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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TANNIC-ACID	Seed	--	--	*	
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#### Activities (41)

Aldose-Reductase-Inhibitor IC50=1.8 ug/ml	Sawada, H., Hamatake, M., Hara, A., Nakagawa, M., Nakayama, T. 1989. Inhibition of Human Placenta Aldose Reductase by Tannic Acid. <i>Chem Pharm Bull</i> , 37(6): 1662-1664.
Allergenic	
AntiHIV IC90=200 ug/ml	Tan, G.T., Pezzuto, J.M., Kinghorn,* A.D., Hughes, S.H. Evaluation Of Natural Products As Inhibitors Of Human Immunodeficiency Virus Type 1 (HIV-1) Reverse Transcriptase. <i>Journal of Natural Products</i> , 54(1): 143-154, 1991.
Antianacarditic (Rhus)	
Antibacterial	
Anticariogenic	
Anticolic	
Antidecubitic	
Antidermatotic	
Antidiarrheic	
Antidote For Heavy Metals	Merck 11th Edition
Antidisenteric	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiencephalitic	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Antienteric	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Antifeedant 2-4% diet	
Antigargantitic	
Antigingivitic	
Antihemorrhoidal	Martindale's 29th
Antiherpetic	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antinitrosaminic	
Antiobesity (Antinutrient)	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiophidic	
Antioxidant IC56=30 ppm	
Antipharyngitic	
Antipolio	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Antirhinitic	
Antiseptic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antistomatitic	
Antitonsilitic	
Antiulcer	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiviral	Antiviral Research, 14: 323.
Astringent	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Cytotoxic 15 ug	
Detoxicant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Emetic	Martindale's 29th
FLavor FEMA 1-1,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hemostat	Merck 11th Edition
Hepatotoxic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Immunostimulant	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82.
Pesticide	

TANNIN	Seed	--	90000.0	0.12	*
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#### Activities (35)

Anthelmintic	
AntiHIV	
Antibacterial	
Anticancer	
Anticariogenic	
Antidiarrheic	
Antidisenteric	
Antihepatotoxic	
Antihypertensive	

Antimutagenic	
Antinephritic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antiophidic	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC50=1.44 ug/ml	
Antioxidant 1/3 quercetin	
Antiradicular 500 mg/kg/day orl mus	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antiradicular 1/3 quercetin	
Antirenitic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antitumor	
Antitumor-Promoter	
Antiulcer	
Antiviral	
Cancer-Preventive	HerbalGram No. 22 - Spring 1990, page 14.
Carcinogenic	
Chelator	
Cyclooxygenase- Inhibitor	
Glucosyl- Transferase-Inhibitor	
Hepatoprotective	
Immunosuppressant	
Lipoxygenase- Inhibitor	
MAO-Inhibitor	
Ornithine- Decarboxylase- Inhibitor	
Pesticide	
Psychotropic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Xanthine-Oxidase- Inhibitor	

TETRACOSIC-ACID	Seed	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
THEOBROMINE	Seed	18.0	20.0	-0.5	*

#### Activities (21)

Anorexic	Martindale's 28th
Antiasthmatic 10 mg/kg/orl/man	Martindale's 29th
Anticellulitic	
Arteriodilator	
Bronchodilator	Merck 11th Edition
CNS-Stimulant	
Cardiotonic	Merck 11th Edition
Diuretic 300-600 mg/man/day	Martindale's 28th
Emetic	Martindale's 28th
Fetotoxic 100 mg/kg	
Herbicide IC41=100 ppm	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Myocardiotonic	
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Myostimulant	Martindale's 29th
Pesticide	
Stimulant	
Teratogenic 100 mg/kg	
Vasodilator	Merck 11th Edition
cAMP-Inhibitor IC50=0.06 mg/ml	Schussler, M., Fricke, U., Nikolov, N., and Holzl, J. 1991. Comparison of the Flavonoids Occurring in Crataegus species and Inhibition of 3',5'-Cyclic Adenosine Monophosphate Phosphodiesterase. <i>Plant Medica</i> 57: Suppl Issue 2. p.A-133.
cAMP- Phosphodiesterase- Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
cGMP- Phosphodiesterase- Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

THEOBROMINE	Leaf	--	--	*
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Anorexic	Martindale's 28th
Antiasthmatic 10 mg/kg/orl/man	Martindale's 29th
Anticellulitic	
Arteriodilator	
Bronchodilator	Merck 11th Edition
CNS-Stimulant	
Cardiotonic	Merck 11th Edition
Diuretic 300-600 mg/man/day	Martindale's 28th
Emetic	Martindale's 28th
Fetotoxic 100 mg/kg	
Herbicide IC41=100 ppm	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Myocardiotonic	
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Myostimulant	Martindale's 29th
Pesticide	
Stimulant	
Teratogenic 100 mg/kg	
Vasodilator	Merck 11th Edition
cAMP-Inhibitor IC50=0.06 mg/ml	Schussler, M., Fricke, U., Nikolov, N., and Holzl, J. 1991. Comparison of the Flavonoids Occurring in Crataegus species and Inhibition of 3',5'-Cyclic Adenosine Monophosphate Phosphodiesterase. Plant Medica 57: Suppl Issue 2. p.A-133.
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

THEOPHYLLINE	Seed	--	5.0	-0.81	*
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#### Activities (36)

(+)-Inotropic	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Allergenic	Martindale's 29th
Antiapneic	Martindale's 29th
Antiasthmatic 5 mg/kg/orl/man	Martindale's 29th
Antibradyarrhythmic	Martindale's 29th
Antibronchitic	
Anticellulitic	
Antidote Charcoal & Propanolol	Martindale's 29th
Antiemphysemic	Martindale's 29th
Antineuragic	Martindale's 29th
Antirhinitic	Martindale's 29th
Antispasmodic 100 uM	
Antiviral	
Arteriodilator	
Bronchodilator	
CNS-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cardiovascular 30 mg/kg orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Choleretic	
Diuretic 15 mg/kg ivn rbt	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Fetotoxic 100 mg/kg	
Herbicide IC58=100 ppm	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Hypertensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Hyperuricemic	Martindale's 29th
Hypoglycemic	
Myocardiotonic	Martindale's 29th
Myorelaxant 100 uM	
Pesticide	
Prostaglandin-Secretor 10 mg/kg orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Stimulant	
Tachycardic	Martindale's 29th
Teratogenic	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Vasodilator	

IC <sub>50</sub> =0.06 mg/ml	Adenosine Monophosphate Phosphodiesterase. Plant Medica 57: Suppl Issue 2. p.A-133.			
cAMP-Phosphodiesterase-Inhibitor				
cGMP-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).			
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).			
THEOPHYLLINE	Leaf	--	--	*
<b>Activities (36)</b>				
(+)-Inotropic	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.			
Allergenic	Martindale's 29th			
Antiapneic	Martindale's 29th			
Antasthmatic 5 mg/kg/orl/man	Martindale's 29th			
Antibradyarrhythmic	Martindale's 29th			
Antibronchitic				
Anticellulitic				
Antidote Charcoal & Propanolol	Martindale's 29th			
Antiemphysemic	Martindale's 29th			
Antineuragic	Martindale's 29th			
Antirhinitic	Martindale's 29th			
Antispasmodic 100 uM				
Antiviral				
Arteriodilator				
Bronchodilator				
CNS-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Cardiovascular 30 mg/kg orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Choleretic				
Diuretic 15 mg/kg ivn rbt	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Fetotoxic 100 mg/kg				
Herbicide IC <sub>50</sub> =100 ppm	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.			
Hypertensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.			
Hyperuricemic	Martindale's 29th			
Hypoglycemic				
Myocardiotonic	Martindale's 29th			
Myorelaxant 100 uM				
Pesticide				
Prostaglandin-Secretor 10 mg/kg orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Stimulant				
Tachycardic	Martindale's 29th			
Teratogenic	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses			
Vasodilator				
cAMP-Inhibitor IC <sub>50</sub> =0.06 mg/ml	Schussler, M., Fricke, U., Nikolov, N., and Holzl, J. 1991. Comparison of the Flavonoids Occurring in Crataegus species and Inhibition of 3',5'-Cyclic Adenosine Monophosphate Phosphodiesterase. Plant Medica 57: Suppl Issue 2. p.A-133.			
cAMP-Phosphodiesterase-Inhibitor				
cGMP-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).			
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).			
THIAMIN	Seed	--	2.0	-1.09
				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
<b>Activities (31)</b>				
Analgesic 1-4 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
AntiLyme 50 mg				
Antialcoholic 50-100 mg/day				
Antialzheimeran 100-3,000 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antianorectic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antibackache 1-4 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antiberiberi				
Anticanker				
Anticardiospasmic				

Anticolic	
Antidecubitic	
Antideliriant	
Antidementia	
Antidyspeptic	
Antiecephalopathic	Martindale's 29th
Antifatigue	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antigastritic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antihangover 50 mg	
Antiheartburn	
Antiherpetic	
Antimigraine	
Antimyocarditic	
Antineuronal 1-4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antineurasthenic	
Antineuritic	
Antineuropathic 50 mg	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antipoliomyelic	
Insectifuge 75-150 mg/man/day	Martindale's 28th
Neuroprotective	
Pesticide	

TRIGONELLINE	Seed	3000.0	13000.0	2.7	*
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#### Activities (15)

Anticancer (Cervix)	Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Anticancer (Liver)	Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antihyperglycemic	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants.</i> CRC Press, Boca Raton, FL 435 pp.
Antimigraine	
Antiseptic	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants.</i> CRC Press, Boca Raton, FL 435 pp.
Antitumor (Cervix)	
Antitumor (Liver)	
Epidermal-Stimulant	
Hypocholesterolemic	
Hypoglycemic 500-3,000 mg/man/day	Martindale's 28th
Hypoglycemic 50 mg/kg or rat	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp.
Mutagenic	
Osmoregulator	
Pesticide	
Propecic	

WATER	Seed	60000.0	100000.0	-0.49	*
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WAX	Seed	10000.0	14000.0	1.27	ANON. 1948-1976. <i>The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi.</i> 11 volumes.
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XANTHINE	Seed	--	--		*
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#### Activities (1)

Carcinogenic
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XYLAN	Seed	--	--		*
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